ABSTRACT

A method and apparatus is provided for breaking down computing tasks within a larger application and distributing such tasks across a network of heterogeneous computers for simultaneous execution. The heterogeneous computers may be connected across a wide or local area network. The invention supports mobile agents that are self-migrating and can transport state information and stack trace information as they move from one host to another, continuing execution where the mobile agents may have left off. The invention includes a server component for providing an execution environment for the agents, in addition to sub-components which handle real-time collaboration between the mobile agents as well as facilities monitoring during execution. Additional components provide realistic thread migration for the mobile agents. Real-time stack trace information is stored as the computing tasks are executed, and if over-utilization of the computing host occurs, execution of the computing task can be halted and the computing task can be transferred to another computing hosts where execution can be seamlessly resumed using the stored, real-time state information and stack trace information.

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